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Transhumanism and the “stable self”

Prepared for delivery at the 2016 Conference of the Canadian Political Science Association, Calgary, AB.

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Introduction:

Imagine the year is 2030 and the latest Silicon Valley “unicorn” has burst onto the scene offering a brain-computer interface (BCI) that allows customers to seamlessly connect their minds to the Internet. Due to advances in computing power and neural mapping, the BCI appears to match your thoughts with search results in real time. You begin to ask yourself, “Who the heck was that famous jazz trumpeter with the big cheeks?” and before you can even complete the question within your inner dialogue, the full biography and discography of Dizzy Gillespie are suddenly present and accessible to your mind. Suppose the BCI is equally capable of recording your experiences and accompanying mental states—something akin to a personal, full-time DVR.¹ With the implantation of the device your experience of the world feels the same, only now your memory and capacity for recollection have been radically expanded. You have apparently instantaneous access to an infinite number of mental resources and can recall every life event in remarkable detail. You will never want due to a faulty memory or lack of information. You will be everything you were before, only now you will also be much, much more. Assuming all major health risks have been addressed, would you purchase and implant this device?

For some the answer to this question is a firm and unflinching “yes,” but for many others even a hypothetical discussion of this kind of innovation evokes strong feelings of apprehension. Those who wish to protest, however, often have difficulty articulating this reluctance, and when push comes to shove they are usually forced into some version of a “playing God” argument—a position that today strikes most as outdated and unpersuasive. Aristotle, for instance, wrote that “...no one chooses to possess the whole world if he first has to become someone else...he wishes for this only on condition of being whatever he is.”² But Aristotle’s confidence in the naturalness of the human condition is directly tied to his telic cosmology and its accompanying assumption that what exists according to nature (including the human form) is both good and relatively stable. His separation of beast, man and god in his *Politics*, is followed in the very next paragraph by the strong assertion that, “as we say,” “nature makes nothing pointlessly.”³ Do we still say this? Today most would surely object, as the natural philosophy upon which Aristotle’s neat categories rest has been under attack for much of the last five centuries, and it is no longer clear that these boundaries can be supposed to be natural or necessary.

In the debate over emerging technologies, those who have attempted to recover a conception of nature as ordered and beneficent have been widely panned as bioconservatives or neo-Luddites.⁴ Leon Kass, who has been a vocal critic of stem

¹ This is, of course, a highly speculative hypothetical, as important questions remain as to whether or

² Aristotle, *Nicomachean Ethics*, 1166a20-23.

³ Aristotle, *Politics*, 1253a9-10.

⁴ Consider: Michael Sandel, *The Case Against Perfection* (Cambridge: Belknap Press, 2007); Francis Fukuyama, *Our Posthuman Future: Consequences of the Biotechnological Revolution* (New York: Picador, 2002); Leon Kass, *Life, Liberty and the Defense of Dignity* (San Francisco: Encounter Books, 2002).

cell research and human cloning, argues for “a life lived always with and against necessity, struggling to meet it, not to eliminate it.”⁵ The trouble for Kass, of course, is that “meeting necessity” often involves tremendous suffering for those who are have been disadvantaged by the genetic lottery. Should these unfortunate people be denied potentially life-altering treatments? Can we be persuaded that this kind of suffering is both natural and good? This is a tough sell, to say the least. As a prominent advocate for human biotechnology writes, “it is astonishing that somebody as distinguished as Leon Kass should still in this day and age be tempted to rely on the natural as a guide to what is desirable or normatively right.”⁶ With wide agreement that no *ought* can be determined from what *is*, the attempt to mitigate enhancement technologies on the grounds that unbound manipulation threatens natural boundaries seems to be a non-starter.

But what does all of this mean for our BCI hypothetical? If we truly are persuaded that human nature is an illusion and that our “given” or “natural” limitations are, in reality, arbitrary barriers to be overcome for the sake of future flourishing, what reason could we give for not implanting this device? Transhumanists, who occupy the opposite end of the spectrum from bioconservatives in the debates surrounding emerging technologies, forcefully argue that the adoption of all novel innovations ought to be the necessary consequence of the rejection of “natural” standards. The very idea that one might distinguish between therapy and enhancement—that someone could be returned to their “natural” functioning—is seen by transhumanists as misguided. All therapy already is enhancement, they argue, because there simply is no standard according to which one can judge where any human being’s capabilities should terminate.⁷ Denying that any limitation upon human capability can be reasonably defended, they race towards the logical conclusion: Brain implants for all!

While Aristotelian natural philosophy may not hold much weight in the 21st century, it will be argued here that his above quoted passage continues to pose a serious challenge for those who advocate for unbound human enhancement. This is because we can interpret Aristotle’s remark that “no one wishes to possess the whole world if he first has to become someone else,” in more than one way. On the one hand, as has been suggested thus far, this could refer to species membership, implying that we should not wish for these goods if it means becoming a beast or a god in the process. As has already been noted, however, the firm boundaries that mark human nature for Aristotle have been under increasing strain since the development of early modern science. Generally speaking, it is no longer the case that “we say” that nature has formed its species purposefully, and groups such as the transhumanists do, in fact, explicitly say the opposite, hoping to transcend the

⁵ Kass, *Dignity*, 18.

⁶ Nick Bostrom, “In Defense of Human Dignity,” *Bioethics*, Vol. 19, No. 3 (2005): 205.

⁷ See, for instance, E. Juengst, “Can Enhancement be Distinguished from Prevention in Genetic Medicine?” *Journal of Medicine and Philosophy* 1997 (22): 125-42; and also David B. Resnik, “The Moral Significance of the Therapy-Enhancement Distinction in Human Genetics,” *Cambridge Quarterly of Healthcare Ethics* 2000 (9-03): 365-77.

limitations of their species en route to a god-like posthuman.⁸ On the other hand, however, Aristotle's remark can be interpreted to refer not to continuity of the species but to continuity of the self. This interpretation offers the grounds for a very different challenge, one that is not directly dependent upon Aristotle's broader remarks regarding nature and purposefulness.

Those who advocate for human enhancements such as BCIs tend to do so because they believe this kind of device would allow its user to become a better version of his or her self—as has been stated above, the argument goes that “You will be everything you were before, only now you will also be much, much more.” But are things really this simple? If I merge my mind with the Internet, who or what is it that can be said to be doing “my” thinking? Would my self remain fundamentally the same, only having been augmented by the implant, or would a qualitative shift have occurred where “I” become constituted more by the Internet than the biological capacities that previously shaped my selfhood? Put another way, can selfhood be conceived in these +1 terms, or is it the case that the self exists only as a result of particular limitations that the very march towards enhancement seeks to overcome? These are difficult but important questions, and they have received scant attention in the literature surrounding enhancement technologies.

In what follows these questions will be considered as part of an examination of transhumanism, the self-described “intellectual and cultural movement” that most forcefully advocates for human enhancement through applied technologies. This paper has three aims: (1) To show that most all accounts of the transhumanist project necessitate a stable component of the self. In other words, that the project becomes incoherent if the “stable self” cannot be established. (2) To show that, although examples within the literature make passing reference to this issue, serious questions remain concerning who or what might survive the type of radical enhancements advocated by transhumanists. And (3), and most provisionally, to extrapolate lessons from these questions surrounding radical enhancement and selfhood that might help to inform broader debates concerning emerging technologies.

Part One: What is transhumanism and how does help us think about the self?

The *Transhumanist FAQ*, a collaborative document with signatories from many fields of study, defines transhumanism as:

The intellectual and cultural movement that affirms the possibility and desirability of fundamentally improving the human condition through applied reason, especially by developing and making widely available

⁸ See Nick Bostrom et al. “The Transhumanist FAQ,” Humanity +. Accessed April 2016, <http://humanityplus.org/philosophy/transhumanist-faq/>; especially sections 1.2 & 5.3

technologies to eliminate aging and to greatly enhance human intellectual, physical, and, psychological capacities.⁹¹⁰

Intending to employ current day as well as speculative technologies—including genetic engineer, molecular nanotechnology, and superintelligence—to greatly enhance current human capacities, transhumanists hope to one day create posthumans: “future beings whose basic capacities so radically exceed those of present humans as to be no longer unambiguously human by our current standards.”¹¹ These eventual posthumans may even exist primarily in digital form, the result of a process called “uploading” where “an intellect” is transferred “from a biological brain to a computer” so that it might have its capacities radically expanded and persist indefinitely.^{12 13} While talk of consciousness uploading and radical life extension might sound outrageous to some, transhumanists are quick to point out that most of us are already cyborgs of one kind or another. Some of us use pacemakers or prosthetics that marry machine and biology, while today millions carry around powerful computers in their pockets—to which, as is often noted, they seem to be quite attached. The only real difference between the Iphone-wielding, wifi-connecting millennial of today and the BCI example with which this paper began, the transhumanist will note, is one of speed. Our minds and bodies are already augmented, they insist, so why not go the next step?

Though transhumanism is often disregarded on account of these extreme sounding claims, a small number of scholars have argued that it is for this very reason that greater attention ought to be paid to the movement. Ronald Cole-Turner, for instance, writes that “...to suggest it is a distraction to consider the broadest possible context of our actions is to give way to an even more dangerous distraction, one that focuses only on the challenge of the moment and fails to see the full context that shapes our attitudes and choices.”¹⁴ It is precisely because of the movement’s willingness to push technological ambition to its extreme, he contends, that it “renders an invaluable service to humanity,” as it forces us “to ask

⁹ Transhumanist FAQ, 1.1.

¹⁰ There is a second part to this definition, which is less relevant to present concerns, which reads: “The study of the ramifications, promises, and potential dangers of technologies that will enable us to overcome fundamental human limitations, and the related study of ethical matters involved in developing and using such technologies.”

¹¹ Ibid, 1.2.

¹² Ibid, 2.6.

¹³ If readers think uploading is pure science fiction, it will be worth pointing out that “whole-brain emulation” is taken very seriously in many fields today. Consider the OpenWorm Project, which in 2014 mapped the neural structure of a *caenorhabditis elegans* (roundworm), reproducing its neural connections in software which then guided a Lego robot that closely mimicked the worm’s food-seeking behavior. See Marissa Fessenden, “We’ve Put a Worm’s Mind in a Lego Robot’s Body,” *Smithsonian Magazine*, November 19, 2014, accessed May 9, 2016, <http://www.smithsonianmag.com/smart-news/weve-put-worms-mind-lego-robot-body-180953399/>

¹⁴ Ronald Cole-Turner, Introduction from *Transhumanism and Transcendence: Christian Hope in an Age of Technological Enhancement* edited by Ronald Cole-Turner (Georgetown: Georgetown University Press, 2011) 14.

uncomfortable questions about our deepest desires, the means we use to achieve them, and the final outcome of all our technological transformations.”¹⁵ Rather than slowly slide into a posthuman future, Cole-Turner suggests that a serious engagement with transhumanism, as speculative as some of its ideas may be, could offer a sobering look at our relationship with technology.

Borrowing the spirit of Cole-Turner’s argument, in what follows it will be suggested that transhumanism offers an excellent lens for thinking about the future of the self. For those who maintain that the self remains an important political and philosophical category, as the great majority of transhumanists do, the radical expansion of human capabilities presents a serious challenge. But even beyond this, those who do not hold this view of the self—those inspired by Hume or who see the “self” as largely socially constituted—are likewise confronted by the real world consequences brought on by the anticipated expansion of human capabilities. The technologies anticipated by transhumanists force us to ask: What might these “no self” views look like, not just in theory, but married to unprecedented powers of material manipulation?

Part Two: Transhumanism and The Self

We can begin by establishing that the self is a central category in nearly all accounts of transhumanism. Most writing in favour of the movement make it clear to readers that, in fact, it is for the sake of the self that these enhancements are to be undertaken. To return once again to the *Transhumanist FAQ*, the very language of the document highlights this point, as the words “you,” “your,” and “yourself” can be found on more than one hundred and twenty occasions. In addition, most transhumanists argue in favour of morphological freedoms, rights held by *individuals* that allow them to employ *personal* modifications *as they see fit*.¹⁶ And finally, it is perhaps worth noting here that several transhumanists have written dialogues where a naïve but curious interlocutor has his/her concerns regarding prospective enhancements soothed by an already modified being who speaks from the future.¹⁷ Readers are clearly intended to see *their* concerns reflected in these fictional characters, and to receive the accompanying message that, once these technologies have been properly understood, it is in *their* interest to join this transitional being en route to better versions of *themselves*.

As a movement directed at the development of the self, it is curious that questions concerning selfhood receive little attention in transhumanist writings.

¹⁵ Ibid.

¹⁶ Max More et al, “Transhumanist Declaration,” *The Transhumanist Reader: Classical and Contemporary Essays on the Science, Technology, and Philosophy of the Human Future*, edited by Max More and Natasha Vita-More (Oxford: Wiley-Blackwell, 2013), 55. As well as Anders Sandberg, “Morphological Freedom – Why We Not Just Want It, but Need It,” in the same publication, pp. 56-66.

¹⁷ Consider the dialogue weaved throughout Ray Kurzweil’s *The Singularity is Near* (2005), or Nick Bostrom’s “Letter from Utopia,” *Studies in Ethics, Law, and Technology* 04 (2008): 6-7.

Regarding continuity throughout radical physiological change, the following remark is typical:

Many philosophers who have studied the problem [of identity] think that at least under some conditions, an upload of your brain would be you. A widely accepted position is that you survive so long as certain information patterns are conserved, such as your memories, values, attitudes, and emotional dispositions, and so long as there is causal continuity so that earlier stages of yourself help determine later stages of yourself.¹⁸

The position sketched here, often referred to as Psychological Continuity Theory or Patternism, is far and away the most popular theory of selfhood put forward by transhumanists.¹⁹ Generally speaking, the argument is as follows: So long as your memories remain intact and you are able to reflect upon your past, present, and potential futures, then your self will persist through time. This theory of selfhood has obvious parallels with computational theories of the mind that remain popular in many disciplines within cognitive science. If the essential part of your self is your memories and your capacity to reflect upon these experiences, and your mind is effectively a piece of hardware upon which the software that is your memories runs, then it follows that your self could survive radical physiological transformation, up to and including being uploaded into a silicon support system rather than a carbon body.

This theory of selfhood is open to challenges from a number of perspectives. For instance, the computational theory of mind has been widely criticized since its formalization in the 1960s.²⁰ But these criticisms appear to be afterthoughts in much transhumanist literature, as when they are noted, they are often quickly dismissed as secondary concerns.²¹ One rare exception is Susan Schneider's 2008 article *Future Minds: Transhumanism, Cognitive Enhancement and the Nature of Persons*,²² where she argues that several types of cognitive enhancements advocated by transhumanists do raise important questions concerning continuity of personhood—questions which, it is suggested, cut to the very core of the transhumanist project. For instance, Schneider notes several well-established logical problems associated with uploading. Borrowing Derek Parfit's oft-cited hypothetical regarding teleportation,²³ Schneider asks whether or not a "downloaded" version of your self on a distant planet could reasonably be said to be

¹⁸ *Transhumanist FAQ*, 2.6

¹⁹ See Kurzweil (2005): 386; Hughes (2013); Barazzetti and Reichlin (2011); Bostrom et al (2003: 2.6).

²⁰ Consider Penrose (1989) and Dreyfus (1993) as two popular examples.

²¹ *Transhumanist FAQ*, sec. 5.4

²² Susan Schneider, *Future Minds: Transhumanism, Cognitive Enhancement and the Nature of Persons*, retrieved from http://repository.upenn.edu/neuroethics_pubs/37

²³ See Derek Parfit, "Divided Minds and the Nature of Persons," Colin Blakemore and Susan Greenfield, *Mindwaves* (1987): 19-28.

you rather than a clone. As she notes, attempting to affirm the former runs one into a whole host of logical paradoxes:

There may be a person created on the planet, but it is merely your clone. We don't need to appeal to a particular theory of personal identity to see this point – the idea that it would be you is flat out contradictory. Consider that if the above scenario is possible, then it is also metaphysically possible (i.e. conceivable) that you were not destroyed in the process. But now, in that case, who would be on the planet? It couldn't be you. You are here on Earth. And because this person is clearly not you if you weren't destroyed, it follows that it wasn't you if you were.²⁴

In addition to these logical difficulties there is the very practical problem associated with distinguishing artificial from biological or “natural” intelligence. We might refer to this as the problem of indeterminable reproduction. Consider, for instance, the hotly contested debates surrounding the meaning of concepts such as mind or consciousness. How do we define and test for the existence of these phenomena? Roger Penrose concludes his lengthy and thorough musing on the nature of the mind by stating, “I simply cannot believe that [consciousness] is something just ‘accidentally’ conjured up by a complicated computation.”²⁵ But elsewhere throughout this same text, Penrose elaborates the theoretical difficulties associated with distinguishing advanced artificial intelligence (AI) from human consciousness. What is now a problem in theory may become a problem in practice should sufficiently developed AI be merged with a digital reproduction of the neural mapping of a human being. Would such a reproduction actually *be* this person? It is quite possible that we will never have a conclusive method for resolving this question.

A tendency within transhumanist writings, as has been pointed out elsewhere,²⁶ is to defer to the modified version of the person to be the final arbiter as to whether or not the enhancement has been a success. In other words, if the pre-modified person decides in favour of the enhancement, and the post-modified person seems pleased with the changes, the thinking is that you have sufficient evidence for justifying the modification in that case. The rather obvious problem with this argument, however, is that it assumes a continuity of values (stable grounds for judging these changes) that cannot be established. On the contrary, there is the very real possibility that a radical enhancement—a BCI implant, for example—would change the very values that are being presumed to be consistent throughout this judgment process. If I merge my mind with a supercomputer, how do I know that my new thinking processes are consistent with my old values and not, as one might reasonably fear, a product of the algorithm with which my old self

²⁴ Schneider, *Future Minds*, 9-10.

²⁵ Roger Penrose, *The Emperor's New Mind* (Oxford: Oxford University Press, 1989): 580-581.

²⁶ Cole-Turner, *Transhumanism and Transcendence*, 10.

has been merged? If the latter is the case, the decision appears to be an appeal, not to the individual in question, but to a general way of thinking that transcends and threatens all particular deviations—a result that would be inconsistent with the fundamental premises of the transhumanist project as it has been articulated above.

There is good reason, then, to believe that these hypothetical enhancements are extraordinarily risky. As Schneider argues, “even if you would like to become ‘superintelligent’, knowingly embarking upon a path that trades away one or more of your essential properties would be tantamount to suicide – that is, to your intentionally causing yourself to cease to exist.”²⁷ Such a result would be precisely the opposite of what most transhumanists intend: the death of the self rather than its enhancement. These questions surrounding continuity of selfhood, therefore, pose a very serious problem for transhumanism, one that is deserving of much greater attention. As Schneider concludes: “Given that it seems unclear whether sameness of personhood would even be preserved by any of these enhancements, it is fair to say that without further work on this topic, the Transhumanist cannot support her case for enhancement.”²⁸

While concerns raised by Schneider and others have added an important layer to the literature surrounding enhancement technologies, they have thus far failed to spur broader reflection within the transhumanist camp regarding questions of selfhood. Although one must remain humble concerning the prospects for initiating genuine reassessment within any intellectual and cultural movement—especially one so in tune with contemporary sentiments regarding the promises of technology—in the next section it will be suggested that a different approach to these questions might prove more fruitful than what has been offered to this point. In particular, two elements of Schneider’s approach will be criticized. First, rather than beginning with the fundamental commitments of transhumanism, Schneider dives into the deep end of a highly speculative debate, leaving her argument mired in technological details that tend to drown out the significance of her challenge. While it is important to ask whether or not uploading could permit continuity of selfhood for the person in question, the radical nature of this hypothetical has the effect of distancing the problem to such a degree that it becomes easy to simply dismiss Schneider’s concern with a casual, “Oh, well, we can worry about that later”. This has, in fact, been the reaction from most within the transhumanist camp. If, to the contrary, one can show that transhumanism is *in principle* incapable of preserving the self according to which the movement is said to be justified, then one has a much more powerful argument to put to advocates of radical enhancement. If such an argument could be established, it would follow that the only coherent way to resolve these inconsistencies would be to abandon either (a) the transhumanist project itself, or (b) the conception of the self as a discrete entity.

²⁷ Schneider, *Future Minds*, 4.

²⁸ Schneider, *Future Minds*, 11.

This brings us to a second critique: Schneider's argument is silent regarding this alternate possibility—the less common version of transhumanism that is unencumbered by questions concerning the self. As transhumanist James Hughes has noted, “Schneider does not address the fact that there are transhumanists, such as myself, who have taken the position that the self is an illusion. I have argued that radical longevity and cognitive enhancement will push liberal democratic society to adopt post-liberal individualist moral, legal and political frameworks that do not assume personal identity, although what the contours of such a framework might be I cannot say.”²⁹ The aim here is to go further than Schneider in these two important respects. First, to present a more forceful critique of unbound enhancement, one that is not so easily lost in techno-speak and the radical hypothetical; and second, to directly engage thinkers such as Hughes who favour “no-self” views and to force them to put on the table the genuine stakes involved with marrying these views of the self with prospective technologies such as genetic engineering and artificial intelligence.

Part Three: The Case for the Limited Self

This paper began by considering a critique of radical human enhancement inspired by Aristotle, one that aims to build a conception of personal continuity by appealing to a selection of passages from Aristotle's *Politics* and *Nicomachean Ethics*. The implication was that any particular human being could only be said to exist as a result of the limitations that constitute his or her as a particular entity. The attempt to radically alter these limitations, then, would threaten the continuity of this particular person (forcing him or her “to become someone else”), and would therefore be irrational and counterintuitive.³⁰ This section aims to build on this foundation by turning to Martin Heidegger's writings on technology. Straight away, it must be admitted that these are strange bedfellows, as Heidegger is well known for his influential criticism of Plato and Aristotle.³¹ To be sure, there are fundamental disagreements that sharply distinguish these thinkers. However, an attempt will be made here to show that considerable evidence is available to support the claim that Aristotle and Heidegger are in agreement on this particular point. Finally, it will be argued that this conception of personal identity—one that emphasizes the role played by rather firm limitations—offers an especially forceful challenge to those who advocate for radical human enhancement.

²⁹ James Hughes, “Transhumanism and Personal Identity,” in *The Transhumanist Reader*, ed. Max More and Natasha Vita-More (Oxford: Wiley Blackwell, 2011), 231.

³⁰ While the implications of Aristotle's argument are suggested in the *Politics* and *Ethics*, its foundation is laid in other works, including the *Physics* and *Metaphysics*. For a more complete analysis of the groundwork of Aristotelian science see Grene (1963) and Spragens (1973).

³¹ To take just one of many readily available examples, Heidegger's *Introduction to Metaphysics* (2000) makes clear to readers that the first step towards genuine understanding is to get “before” the metaphysical tradition inaugurated by Plato and Aristotle. See, for instance, Heidegger's comments that Aristotle was largely responsible for initiating the narrowing of the meaning of *physis* (pg. 17) and therefore setting Western thinking towards a misguided destiny.

While Aristotle and Heidegger disagree on the origin of the boundaries that circumscribe any particular being—Aristotle arguing they are the product of eternal substances and Heidegger insisting that *phusis* is at bottom a mysterious and unknowable form of revealing³²—both thinkers emphasize that it is only as a result of these boundaries that any particular being can persist as such. Heidegger's example of the sacrificial vessel in *The Question Concerning Technology* (*QCT*) is useful for illustrating his position on this question. As he writes, the cause that is "above all responsible for the sacrificial vessel," is that which circumscribes it:

Circumscribing gives bounds to the thing. With the bounds the thing does not stop; rather, from within them it begins to be what after production it will be. That which gives bounds, that which completes, in this sense is called in Greek *telos*, which is all too often translated as "aim" and "purpose," and so misinterpreted. The *telos* is responsible for what as matter and what as aspect are together co-responsible for the sacrificial vessel.³³

This role of limitations and boundaries is highlighted throughout Heidegger's writings, and in each case the emphasis is the same: these are not negative terms. A limitation, properly understood, is not a barrier to be overcome—its meaning cannot be conveyed with the commonly used synonyms restriction or constraint. Limits are, to the contrary, that by which any being becomes manifest. For Heidegger, the term has essentially positive connotations.

To be clear on this point, Heidegger writes elsewhere that "'end' does not have any negative sense, as if 'end' meant that something can go no further, that it breaks down and gives out. Instead, 'end' means completion in the sense of coming to fulfillment [*Vollendung*]. Limit and end are that whereby beings first begin to *be*."³⁴ The very problem of technological nihilism, according to Heidegger, is an inability to recognize these boundaries, to see the limits and ends where "beings first begin to *be*." Heidegger's conception of standing-reserve, presented in the *QCT*, is a description of precisely this phenomenon. Thinking in the modern technological epoch, Heidegger tells readers, is incapable of disclosing meaning because it posits the efficient reorganization of matter as the only worthwhile aim. As a result, beings no longer show up as definitively X rather than Y or Z, as every being is instead seen as potentially any being. X could become Y or Z, or A or B or C. Why not? What is stopping it, aside from the soon to be developed technical expertise required to perform the transformation? As Heidegger elaborates: "Air is now set upon to yield nitrogen, the earth to yield ore, ore to yield uranium," with the entire process "always itself directed from the beginning toward furthering something else, i.e.,

³² Heidegger, *Introduction to Metaphysics*, 166.

³³ Martin Heidegger, "The Question Concerning Technology," in *Basic Writings*, ed. David Farrell Krell (London: Harper Perennial, 1993), 315.

³⁴ Heidegger, *Introduction to Metaphysics*, 63.

toward driving on to the maximum yield at the minimum expense.”³⁵ Boundaries, according to this way of thinking, are not the causes responsible for the manifestation of particular beings, but arbitrary obstacles to the further expression of human freedom understood as efficient reorganization.

The common objection to Heidegger’s characterization of technology is that it amounts to a radical oversimplification. To take what is perhaps his most extreme example, he famously equates modern agriculture with the Nazi gas chamber, calling them essentially the same phenomenon.³⁶ In addition, Heidegger’s characterization of contemporary life seems to conflict with our everyday experiences. Even today, nearly four decades after his death, one would be hard pressed to find anyone who would admit to thinking of their family or friends as standing-reserve, as resources to be exploited for the sake of future interests. “We care deeply about those closest to us,” we protest! “Our lives may be saturated with technologies, but we still know what truly matters!” To this Heidegger would likely respond that those who protest most loudly are simply those who are the most shortsighted. We might think we know what ultimately matters and that we possess the intellectual ammunition with which we can defend these goods from the encroachment of technological mastery, but Heidegger insists that when push comes to shove, the latter will inevitably triumph. This is the case, he argues, because the technological way of thinking has become the only legitimate form of world disclosure or revealing. Technology, he writes, “banishes man into the kind of revealing that is an ordering. Where this banishing holds sway, it drives out every other possibility of revealing.”³⁷ What is worse, the revealing that is technology has the nefarious power of blinding us to its costs. Once again from the *QCT*: “Man stands so decisively in subservience to the challenging-forth of enframing [the process of converting all beings to standing-reserve] that he does not grasp enframing as a claim”.³⁸ The upshot of the argument is this, so long as the technological way of thinking is predominant, our aim will be to transform all beings into raw potential, and we will be utterly convinced that this is the right way to act, no matter what the costs.

It would be putting it mildly to call this is a sweeping claim, so it is understandable that Heidegger’s argument continues to be met with resistance today. But consider one final passage from this essay. Heidegger predicts that “[a]s soon as what is unconcealed no longer concerns man even as object, but exclusively as standing-reserve, and man in the midst of objectlessness is nothing but the orderer of standing-reserve, then he comes to the very brink of a precipitous fall; that is, he comes to the point where he himself will have to be taken as standing-reserve.”³⁹ While many find Heidegger’s critique of technology exaggerated, or at

³⁵ Heidegger, *QCT*, 320-321.

³⁶ *Four Lectures on Technology* (1949)

³⁷ Heidegger, *QCT*, 322.

³⁸ *Ibid.*

³⁹ *Ibid.*

this point simply tired, a strong argument can be made that it is worthy of our attention today more than ever, as the project for the mastery of human nature begins in earnest. Will the enhancement technologies envisioned by the transhumanists make us better versions of ourselves, or will they commit us, unwittingly, to the dissolution of our selves for the sake of maximizing standing-reserve? This is an ugly and personal question, but one that should be approached with the utmost seriousness, as the parallels between Heidegger's prediction and movements such as transhumanism are undeniably strong.

What compels the production of standing-reserve? While there is insufficient space here for a thorough description of Heidegger's critique of metaphysics as ontotheology, it can be said, in short, that for Heidegger the problem of technology is directly related to a tendency to posit "a ground that is common to all entities as such".⁴⁰ What begins with the Platonic idea of the good morphs through several onto-theological epochs before developing into the version that, Heidegger argues, continues to inform our thinking today: Nietzsche's "unthought" metaphysics as will-to-will, what Iain Thomson has described as "an unending disaggregation and reaggregation of forces without any purpose or goal beyond the self-perpetuating augmentation of these forces through their continual self-overcoming."⁴¹ Put simply, on this account standing-reserve is endlessly pursued because our way of thinking has foolishly led us to believe that the truest aspect of any particular being lies beyond its current form as locked up potential that must somehow be released and realized. Our faith in this potential is so strong, Heidegger suggests, that despite any prior evidence in favour of the existence of this "truest aspect," we continue to break all beings down to their most basic units under the assumption that some unifying essence will be discovered and celebrated as *the* truth that explains all of reality.⁴² Meanwhile, all "current forms"—the heterogeneous ways that beings reveal themselves to the world in the absence of technological intervention—come to be seen as utterly meaningless and easily cast aside in the hunt for a final truth. Air is merely nitrogen, the earth merely ore, ore merely uranium, and so on. As Heidegger suggests, once this project has converted the world of objects to standing-reserve, it will inevitably turn inwards to begin breaking down the orderer of objects, the human being. Humans become mere "human resources"—and worse—we set out to do away with the barriers that circumscribe each person as a distinct being so that we might unlock some unspeakable potential that is said to be hidden behind our limited capacities.

It was suggested earlier that by avoiding abstraction one might offer a more accessible and forceful critique of enhancement technologies. Perhaps it might be

⁴⁰ Martin Heidegger, *Identity and Difference*, trans. J. Stambaugh (New York: Harper and Row, 1969): 70.

⁴¹ Iain D. Thomson, *Heidegger on Ontotheology: Technology and the Politics of Education* (Cambridge: Cambridge University Press, 2005): 55-56.

⁴² Consider Heidegger's remarks regarding the "chronological" versus "historical" relationship between technology and modern science from *QCT* (326-327).

proposed that this discussion has now strayed too far in this same direction. However, as obtuse as Heidegger's language may be at times, with care one can extrapolate rather straightforward arguments from his writings. This section will conclude with a contemporary example that will hopefully illustrate this point while tying together the preceding arguments. Julian Savulescu, an oft-cited transhumanist, has argued that performance-enhancing drugs (PEDs) ought to be permitted in competitive sports.⁴³ Though this position is controversial, Savulescu's reasoning seems to follow quite closely from what many claim to believe about the relationship between genetics and justice. As Savulescu contends, individuals are often burdened by their genetic makeup, even though they had no choice regarding its structure. This is widely seen to be unfair, and this perceived injustice is precisely why we act to relieve those who suffer from a variety of genetic disorders. Why should this be any different for competitive athletes, Savulescu asks? Taking a close look at professional cycling, Savulescu notes that most winners of the Tour de France produce atypically high levels of erythropoietin (EPO), a hormone that increases the rate of production of red blood cells, allowing larger volumes of oxygen to reach riders' muscles. Surely, Savulescu suggests, those who produce lower amounts of EPO have likewise lost out on the genetic lottery through no fault of their own. Accordingly, professional cycling would be more just if controlled doses of EPO were given to riders whose genes produce lower levels of the hormone. In this case, Savulescu contends, race results would reward those who actually tried the hardest, rather than those who were simply fortunate to be born with the right genes.

Readers may find Savulescu's conclusion alarming, but his argument is consistent with widely shared premises and should therefore be taken seriously. He rather cleverly forces readers to ask: On what grounds could you permit treatment for a disorder such as Cystic Fibrosis but not for EPO production? Why is a genetic disadvantage seen to be unnatural, while a genetic advantage is said to be perfectly natural? These are troubling questions, as objecting to the controlled use of EPO seems to force one into the difficult position of establishing a distinction between therapy and enhancement—an argument that, as was established earlier, is believed to be of limited use even by those who see the project for human enhancement as a great danger.⁴⁴ To be frank, there are no simple responses to the questions put forward by Savulescu. The reading of Heidegger outlined above, however, encourages a different sort of question. One that might turn the tables on Savulescu by asking: If one can so casually dismiss the genetic makeup of an individual as an unessential component of his/her being, where is it that one might expect to find the features according to which this person might be identified? In other words, if you identify any particular human according to his/her potential alone, rather than his/her given limitations, what is left to circumscribe this being as a particular entity rather than simply a homogenous and content-less abstraction? If we return

⁴³ Julian Savulescu, "Justice, Fairness and Enhancement," in *Annals of the New York Academy of Science*, Dec. 2006 (1093:1): 321-338.

⁴⁴ See Kass, *Ageless Bodies*, 13.

to Savulescu's EPO example with these questions in mind, it is clear that Heidegger presents a very serious challenge to the inclination towards enhancement.

Can the ability to muster effort—the standard for fairness suggested by Savulescu—be granted status as the seat of selfhood? Why is this component of the athlete said to reflect his/her essential self? Why not go further and likewise seek the means by which this capacity might be expanded? Without arbitrarily assuming that what we call effort somehow occupies a sacred space beyond rightful technological intervention, it is not clear that Savulescu's new standard can escape the inevitable challenge that the next call for enhancement will bring. But if we pause for a moment to look around and get our bearings, it becomes apparent that we are rapidly tumbling towards the dissolution of the self in favour of a rather poorly articulated conception of potential. We are, as Heidegger would suggest, destroying the boundaries that circumscribe particular athletes in the name of continual self-overcoming. We are slowly but surely converting each of these distinct human beings into standing-reserve: a pool of homogenized potential to be infinitely reordered according to the principles of maximum efficiency.

From this perspective, the suggestion that psychological continuity might offer a sufficient account of selfhood seems absurd. To enhance to this degree one must relinquish the very belief that anything that might reasonably be said to constitute him or herself as a discrete person is worthy of preserving. While particular memories and values may be useful for distinguishing unique selves in the earliest stages of the project for human enhancement, these particularities will soon be lost to an increasingly homogenous way of life. "Every one should experience everything imaginable," the transhumanist proclaims, but the drive towards infinite capacities and experiences is antithetical to a self that is supposed to be grounded by unique values and memories. In the first instance, any value that contrasts with additional enhancement must be done away with for the project to maintain its momentum. In the second, as these modified beings become equally unbound by particular limitations, their memories become increasingly similar, rather than distinct. To suggest that the particular experiences that mark their distant pasts might constitute grounds for selfhood would be akin to suggesting that the latest Mac Notebooks each have distinct identities because they were assembled at different factories and shipped on different dates. In reality, of course, these laptops are considered to be entirely interchangeable. Which leads to a final and most alarming consequence of the premises of transhumanism. If the ultimate aim is the greatest achievable efficiency, at some point duplicate experiences are bound to appear to be nothing but redundancies—just another unnecessary barrier to the completion of the project. While transhumanists fancy becoming posthumans with "godlike" capacities, few consider the very real possibility that such a god would be conjured at their expense.

At the conclusion of the preceding section it was suggested that by establishing that transhumanism is *in principle* incapable of preserving the self, one could show that any account in favour of radical human enhancement that also

posits the self as a meaningful category would inevitably result in a *reduction ad absurdum*. The aim of this section has been to show, with the assistance of Heidegger, that there are very good reasons for believing that the dissolution of the self is the inevitable result of the project for radical enhancement. When in every case the potential is privileged over the actual, as it appears to be with transhumanism, the prospects for preserving even a relatively stable entity appear to be scant. This way of thinking, as Heidegger argues so persuasively, cannot recognize concrete particulars, and when it is applied to the human being it simply leaves no room for the continuity of discrete selves.

Conclusion: Summary and Provisional Lessons

The aim of this paper has been to offer a foundation for an alternative critique of radical human enhancement, and especially transhumanism. In particular, I have hoped to address a number of shortcomings that have plagued the arguments of the bioconservatives and thinkers such as Schneider. In regards to this first group, as was outlined in the introduction, their dependence upon a firm conception of nature has made them an easy target for those who wish to emphasize the naturalistic fallacy. The immanent critique developed above does not require an appeal to nature, and is therefore not susceptible to this rebuttal. As for Schneider, I have hoped to show that, although I am in agreement with much of her criticism, her reliance upon a hypothetical discussion of uploading has had the effect of placing her concern so far into the future that it has generally been dismissed as a problem for another day. By arguing, to the contrary, that it is not any particular enhancement that should have us concerned, but instead the general inclination towards unbound enhancement, the critique offered here can speak to both hypothetical technologies such as uploading and also to contemporary enhancements such as PEDs.

And finally, as Schneider's criticism is silent regarding those who favour radical enhancement but hold the "no self" view, I have hoped to expand on her argument by presenting a critique that might speak to this camp with some force. Here a few words still need to be said. James Hughes (see footnote 29) has noted that the no-self view introduced by David Hume has been given new life thanks to recent research in cognitive neuroscience. As a result of new methods for studying the brain, we appear to now have the physical evidence to back Hume's position. But it must also be admitted that the results of this young science are preliminary and that broader arguments regarding the nature of consciousness and personhood remain controversial even within the discipline. To suggest, as Hughes does, that one might leap from these preliminary indications to a full on rejection of the self as a philosophical and political category is the height of imprudence, as the political consequences of this decision could be staggering. What would it mean to reject personal identity and "adopt post-liberal individualistic moral, legal, and political frameworks" as Hughes suggests? While Hughes admits that no one can say exactly what such a scenario might look like, he does go on to consider a number of

possibilities, including one example that envisions the use of neurotechnologies to replace the illusion of individual identity in favour of “a completely collective identity (e.g. “the Borg”).”⁴⁵ Willingly marrying a strong no-self view with radical enhancement technologies, Hughes opens the door to totalitarianism on an almost unthinkable scale.

Unless we are willing to seriously entertain the prospect of doing away with the self altogether, including the potential political consequences of this decision, there needs to be a broader effort to defend an account for the self in the literature surrounding enhancement technologies. This is not to suggest that there are any simple answers to questions surrounding selfhood. Throughout this paper I have attempted to show a sensitivity towards the inevitable costs that would result from turning away from technologies that could alleviate a great deal of human suffering. Any account of selfhood will necessarily privilege some and disadvantage others. But the lack of clarity surrounding these questions should not be confused for a license to dismiss them altogether. If this paper has accomplished anything, hopefully it is to have shown that this decision invites great dangers of its own.

⁴⁵ Hughes, *Personal Identity*, 231.

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